

U.S. Serial No. 10/009,415
"High-Pass Branch of a Frequency Separating Filter for ADSL Systems"
Response to November 3, 2004 Office Action

Remarks/Arguments:

L Introduction

Upon entry of the present amendment, claims 1-14 will remain pending in this application. Applicants note with appreciation the Examiner's indication that claims 12-14 are directed to allowable subject matter. Because the claims from which claims 12-14 depend should be considered patentable in light of the amendments and arguments being presented with this response, Applicants submit that these claims are allowable in their present form, without being rewritten in independent form.

Claim 1 has been amended to clarify that the high-pass branch comprises a pass range above about 20 kHz (support for which appears in the specification as originally filed, and at page 6, lines 11-23 of the translated PCT application) and to refer to the "deep-pass" branch as the "low-pass" branch in order to be more consistent with the terminology used throughout the specification (support for which appears in the specification as originally filed, and at page 4 of the translated PCT application).

II. 35 U.S.C. § 103 – Biran, Kobayashi, and Petzold

The Examiner has rejected claims 1-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,627,501 to Biran et al. in view of U.S. Patent No. 3,683,271 to Kobayashi in combination with WO 99/45643 to Petzold. The Examiner states that (1) Biran discloses an ADSL comprising a low pass filter (LPF) and high pass filter (HPF), with the LPF containing multiple inductive components comprised of magnetic cores, that (2) Kobayashi discloses HPF comprising inductors L1 and L2 and

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capacitors C1 and C2, with the inductors having a core of ferromagnetic material with winding; and that (3) Petzold discloses a magnetic core made of an amorphous or nanocrystalline alloy.

The Examiner uses these references in a 2-part rejection. The first part of the rejection is that it would have been obvious to replace the general air core inductors of the HPF of Biran with the inductor consisting of a ferromagnetic core of Kobayashi in order to provide inductors that are variable. The second step in the Examiner's rejection is that it would have been obvious to replace the general ferromagnetic material of Kobayashi with the amorphous or nanocrystalline alloy of Petzold to provide a material capable of producing a magnetic core with a high saturation induction and a broad range of permeability values. Applicants respectfully traverse this rejection and request reconsideration and withdrawal thereof.

To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references when combined must teach or suggest all the claim limitations. See MPEP, § 2142. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on the applicant's disclosure. The initial burden is on the Examiner to provide some suggestion of the desirability in doing what the inventor has done.

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First, Kobayashi is directed to a different technology area, and thus, there is no motivation for it to be combined with the other references. The Biran reference focuses on coupling Plain Old Telephone System (POTS) signals and Asymmetric Digital Subscriber Line (ADSL) signals to a common line and the Petzold reference is directed to a low-pass filter for a diplexer. By contrast, Kobayashi is directed to a power supply filter for noise suppression in the high frequency band. Quieting signals and joining signals are two different endeavors, and the Examiner has not explained why one of ordinary skill in the art would combine these references. Specifically, why would one of ordinary skill in the art look to a noise suppression application to modify a POTS/ADSL coupling apparatus or a diplexer?

Second, the Examiner has not explained why one of ordinary skill in the art would be motivated to replace one of the Biran inductors with a magnetic core of a nanocrystalline or amorphous alloy of Petzold. There is no teaching or suggestion in Biran that such a replacement would be beneficial. In fact, prior to Applicants' invention, no metallic cores (e.g., cores made from amorphous or nanocrystalline alloys) had been used for high-pass filters in the frequency range above 20 kHz. Only gapped ferrite cores have been used for this purpose (see page 1, lines 13-24 of the translation of the PCT application). This is primarily because it was believed that metallic cores are not applicable at higher frequencies to achieve the performance requested. However, the present inventors found that such cores are advantageous, in particular, in view of permeability, insertion losses, and distortions.

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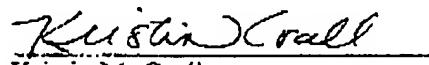
As mentioned above, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on the applicant's disclosure. It is impermissible for the Examiner to use hindsight to arrive at Applicants' claimed invention.

Finally, even if the cited references were properly combinable, the claimed invention would not result. There is no teaching or suggestion in any of the references that the claimed core would be useful for the claimed use in the frequency range above 20 kHz. Accordingly, in light of the above arguments, Applicants respectfully request the Examiner to reconsider and withdraw the rejections.

CONCLUSION

For at least the above reasons, Applicants respectfully request allowance of claims 1-14 and issuance of a patent containing these claims in due course. If there remain any additional issues to be addressed, the Examiner is urged to contact the undersigned attorney at 404.815.6147.

Respectfully submitted,


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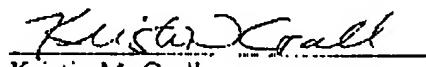
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PETITION FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. 1.136(a), Applicants herewith petition that the period for response to the Office Action dated November 3, 2004, in connection with the above-identified application be extended for three month, to and including May 3, 2005. A credit card authorization for the fee for this petition is enclosed. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Order Account No. 11-0855.

Respectfully submitted,


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